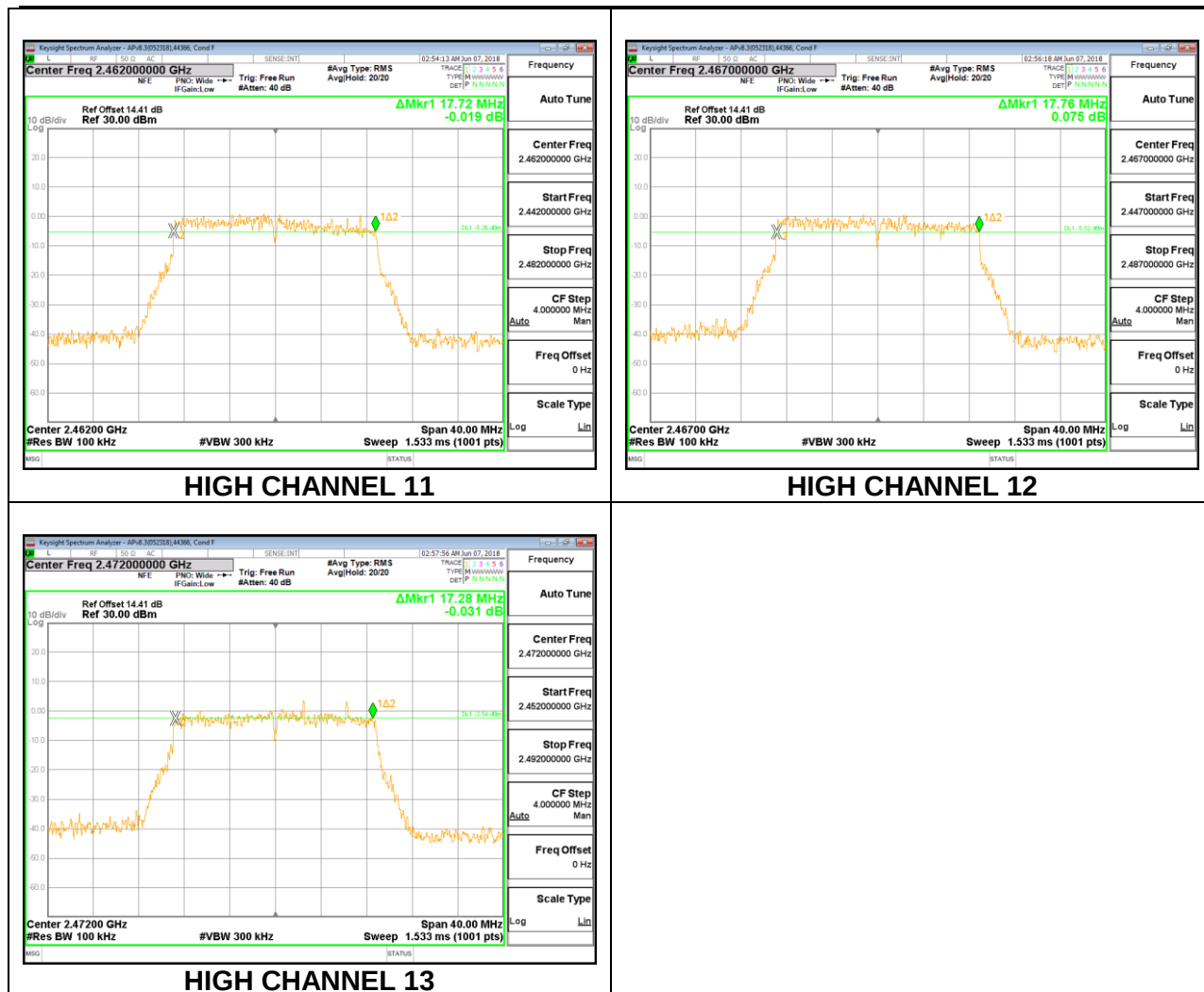
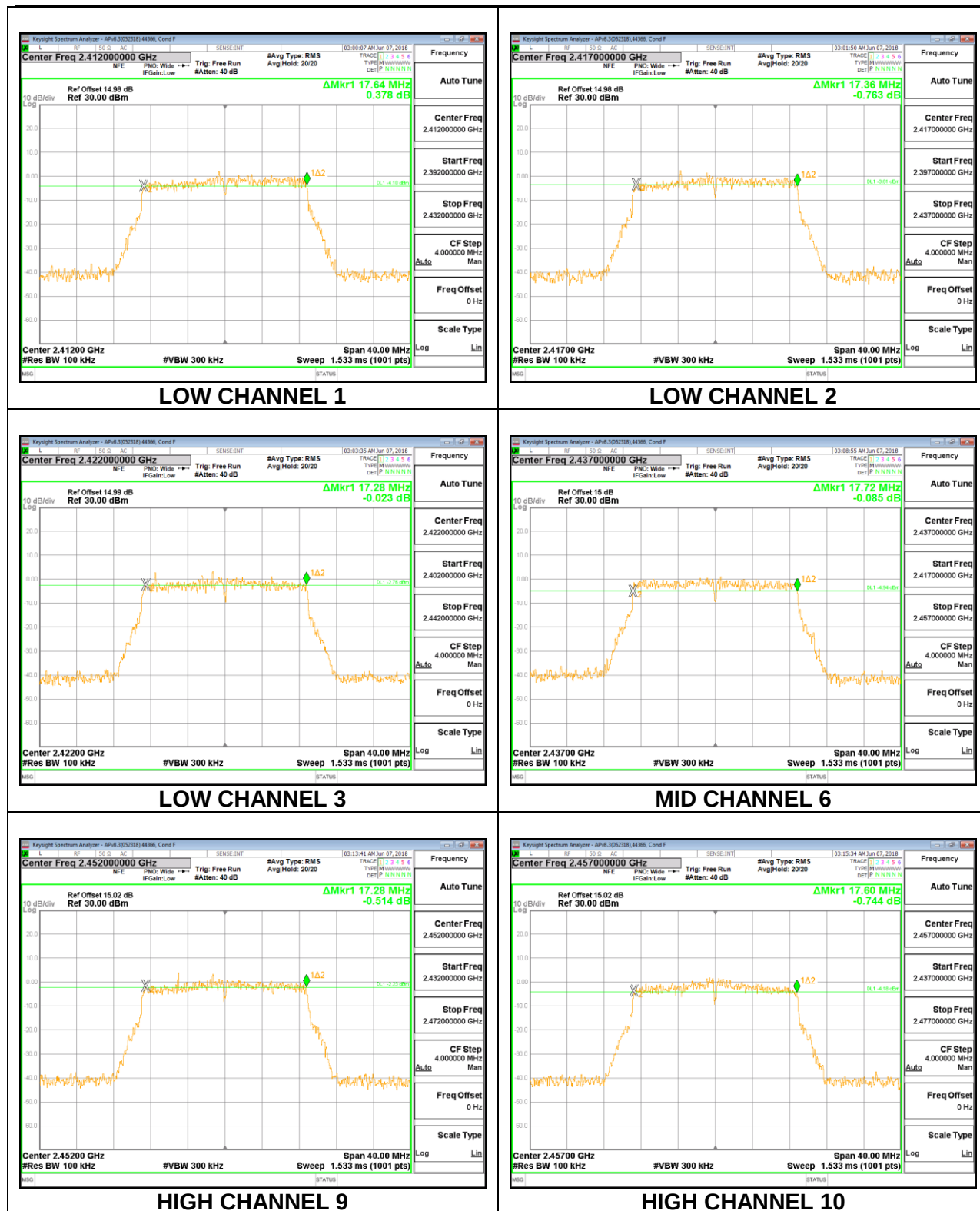
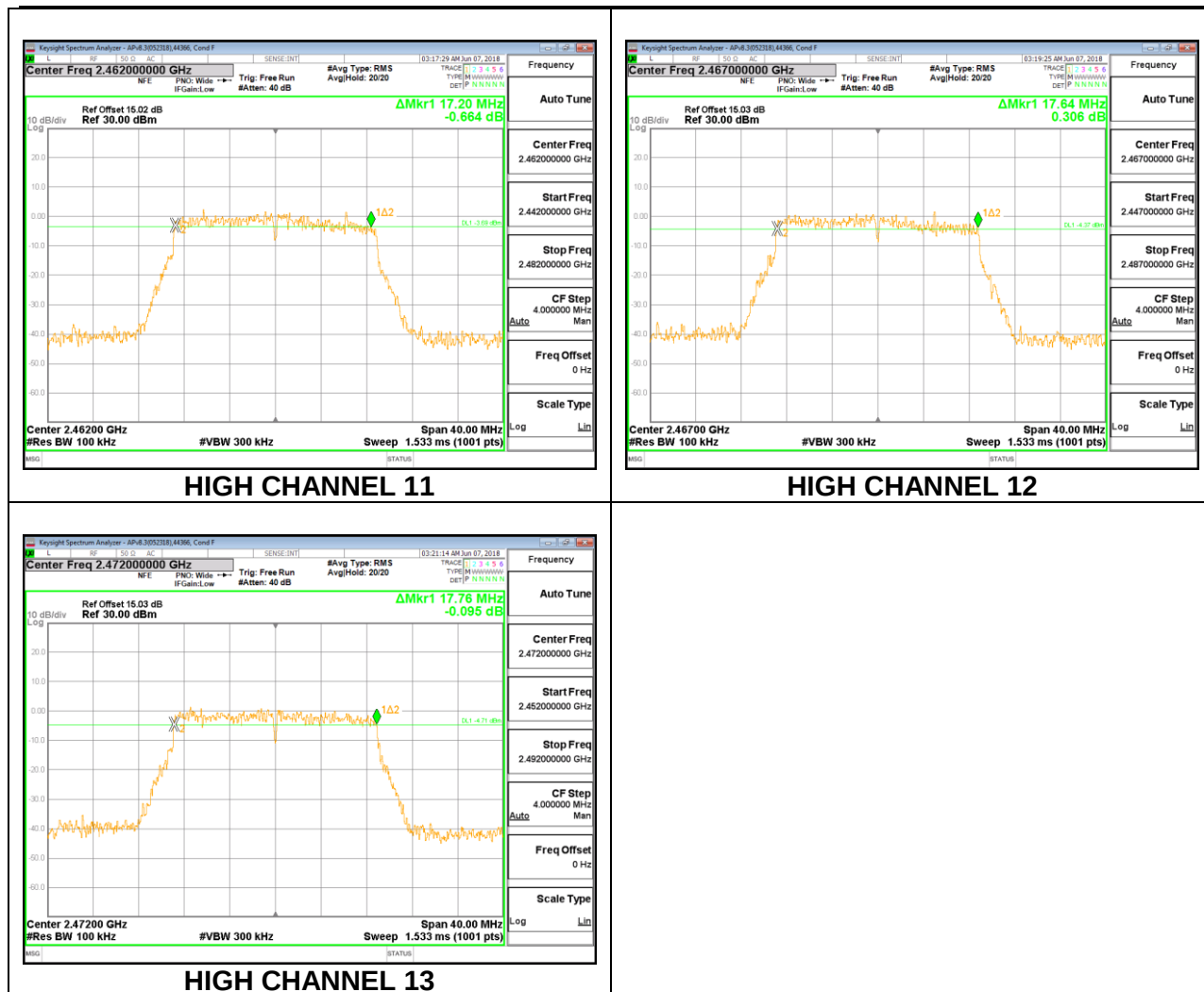




1TX Antenna 5 MODE

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	17.6400	0.5
Low 2	2417	17.3600	0.5
Low 3	2422	17.2800	0.5
Mid 6	2437	17.7200	0.5
High 9	2452	17.2800	0.5
High 10	2457	17.6000	0.5
High 11	2462	17.2000	0.5
High 12	2467	17.6400	0.5
High 13	2472	17.7600	0.5

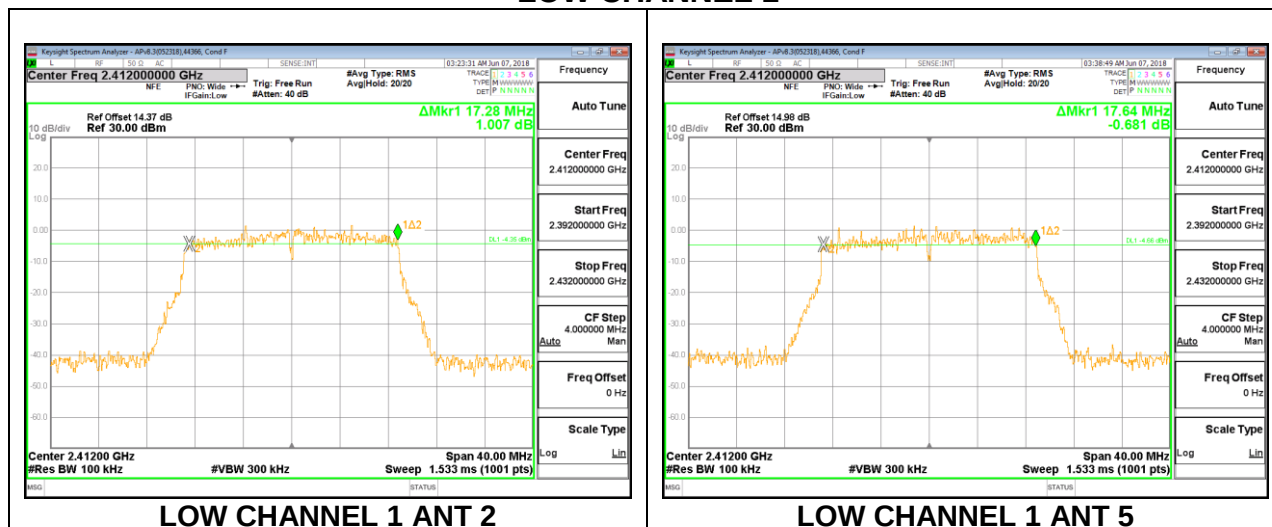




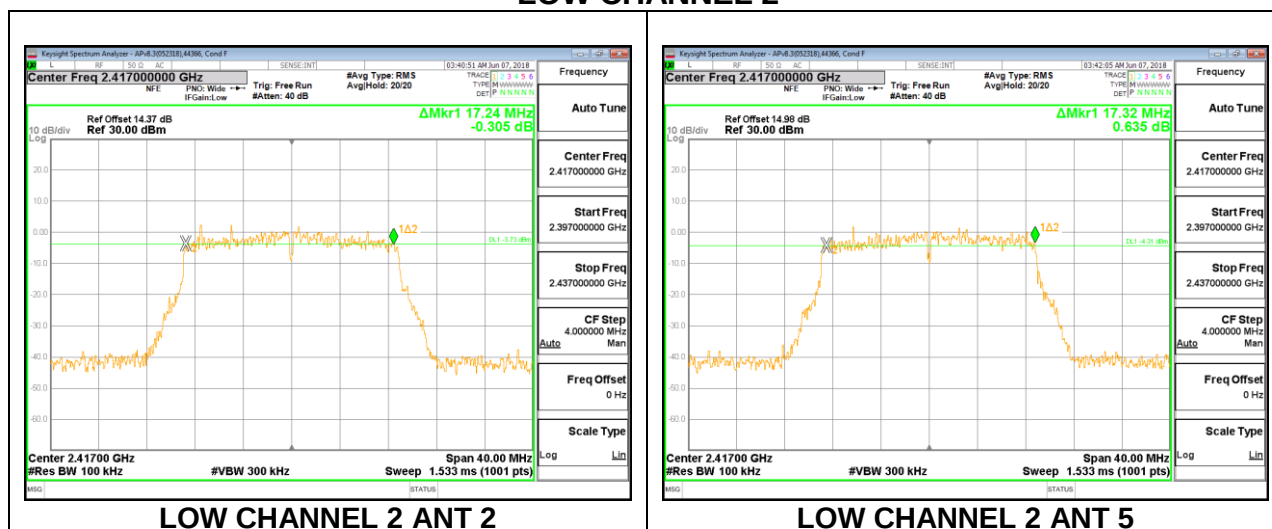
8.3.3. 2TX Antenna 2 + Antenna 5 CDD MODE

Channel	Frequency (MHz)	6 dB BW ANT 2 (MHz)	6 dB BW ANT 5 (MHz)	Minimum Limit (MHz)
Low 1	2412	17.2800	17.6400	0.5
Low 2	2417	17.2400	17.3200	0.5
Low 3	2422	17.3200	17.5600	0.5
Low 4	2427	17.5600	17.5600	0.5
Mid 6	2437	17.8000	17.7200	0.5
High 8	2447	17.5600	17.6000	0.5
High 9	2452	17.6000	17.6000	0.5
High 10	2457	17.6000	17.5600	0.5
High 11	2462	17.3600	17.6400	0.5
High 12	2467	17.6000	17.7200	0.5
High 13	2472	17.6800	17.6800	0.5

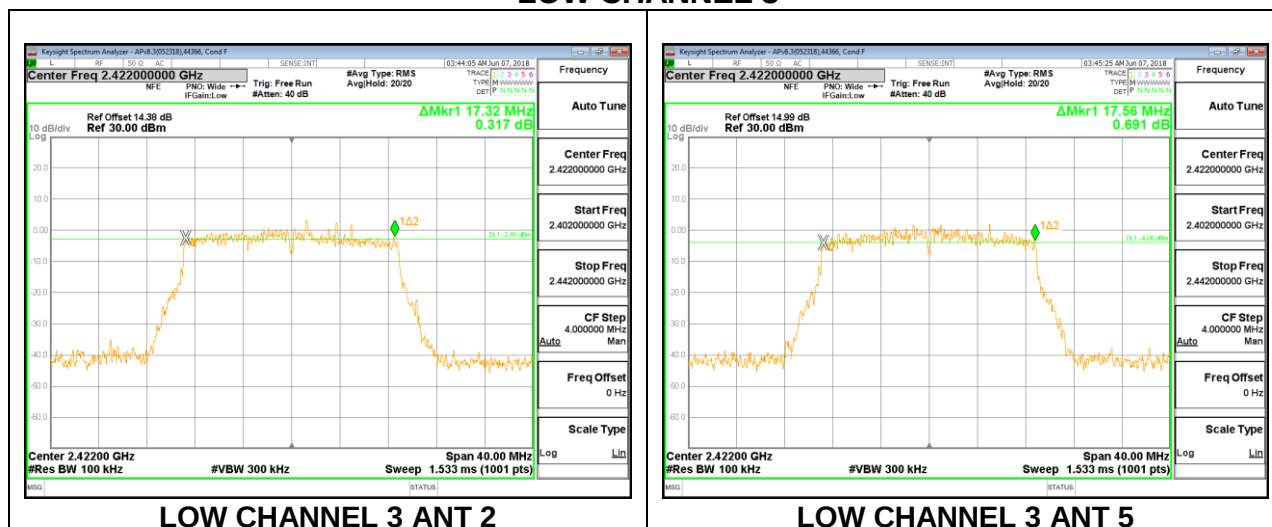
LOW CHANNEL 1



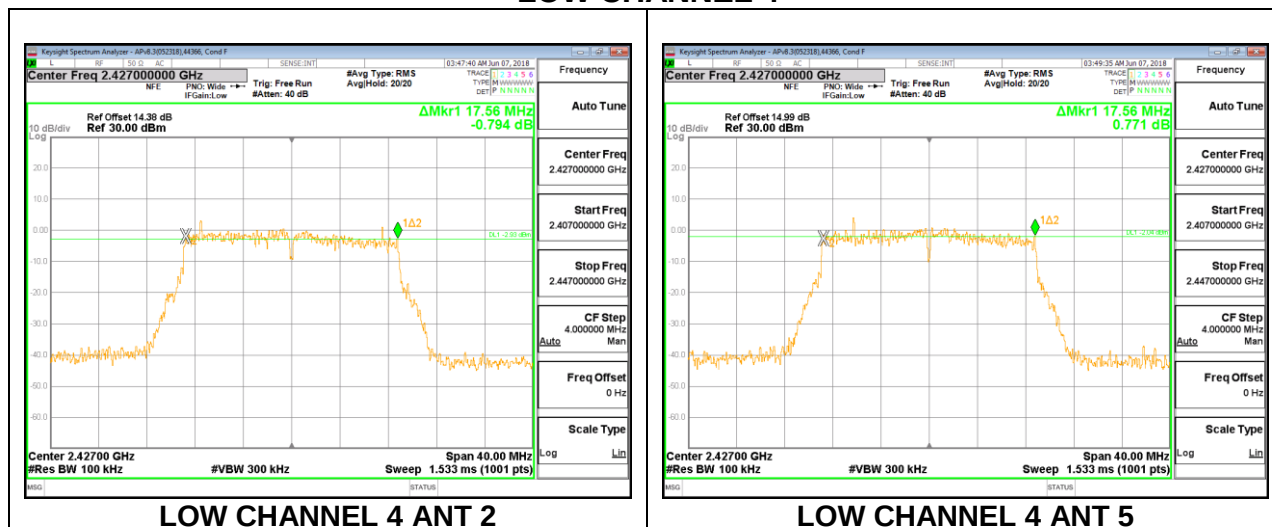
LOW CHANNEL 2



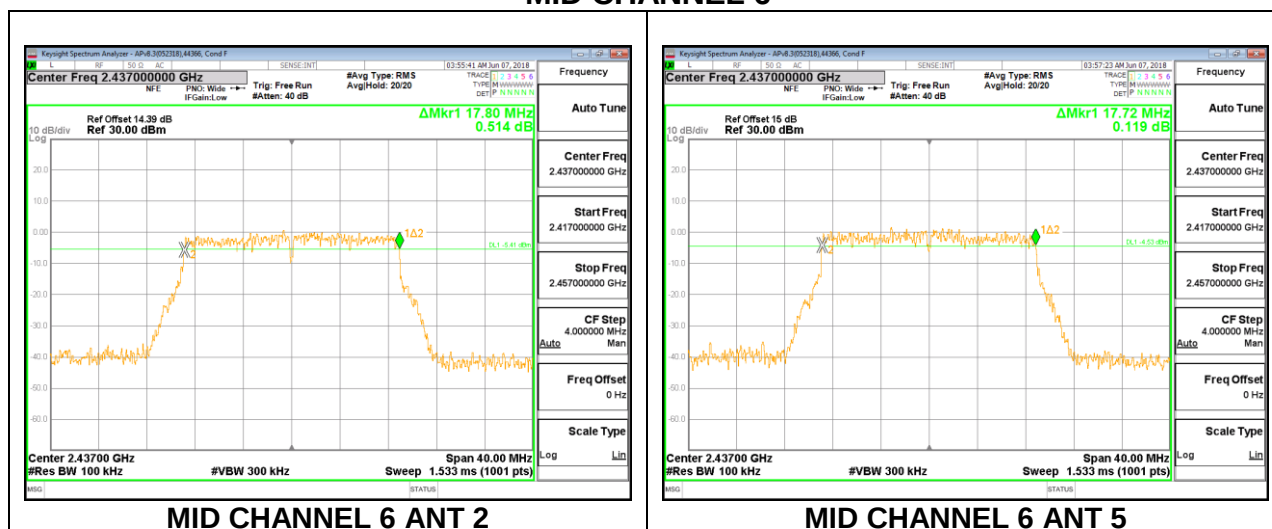
LOW CHANNEL 3



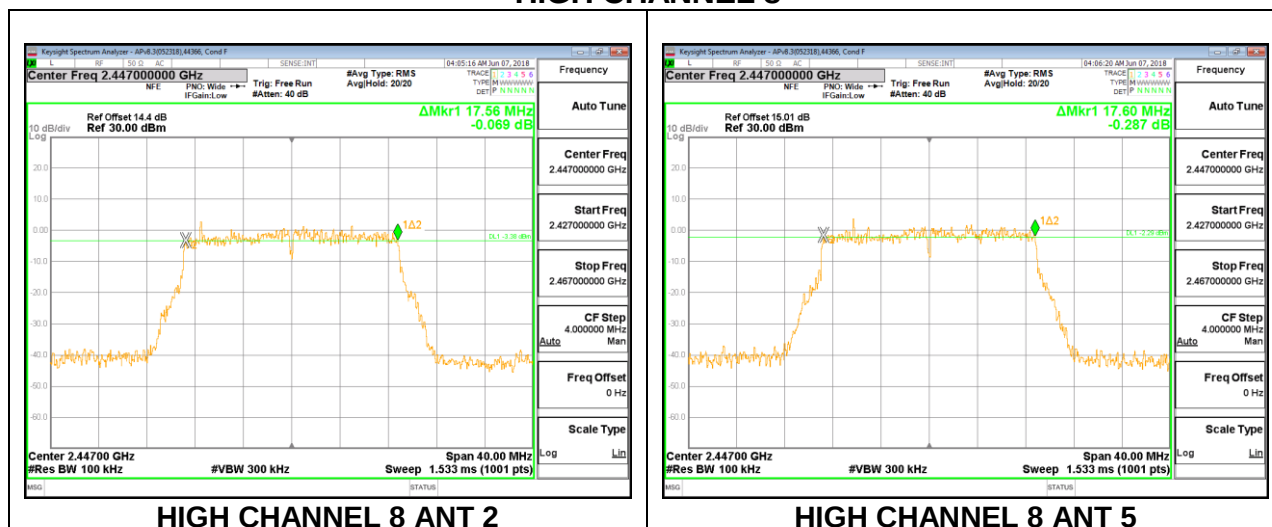
LOW CHANNEL 4



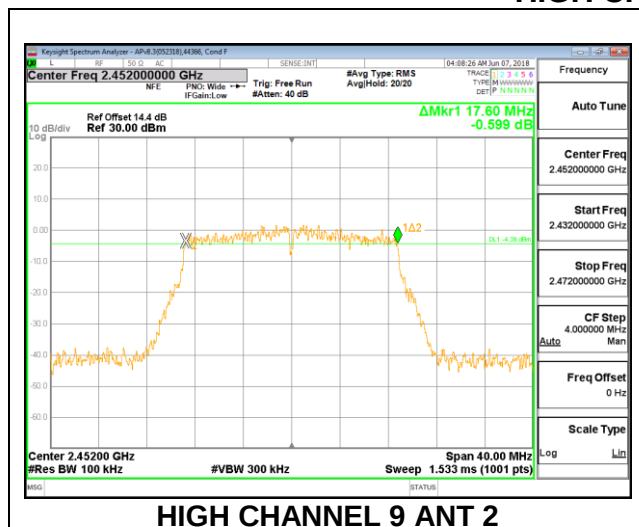
MID CHANNEL 6



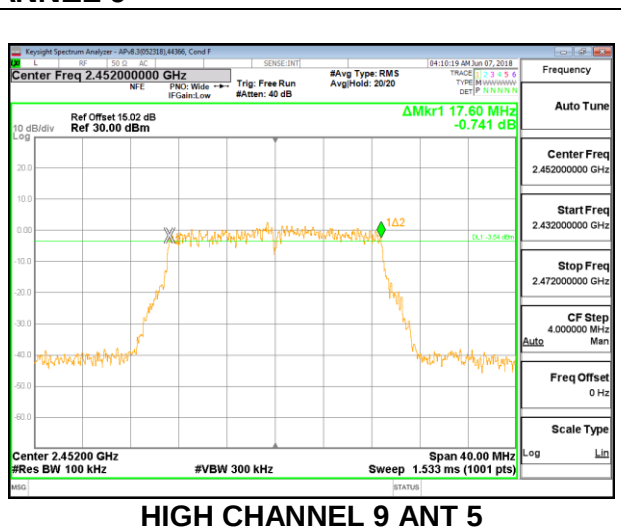
HIGH CHANNEL 8



HIGH CHANNEL 9

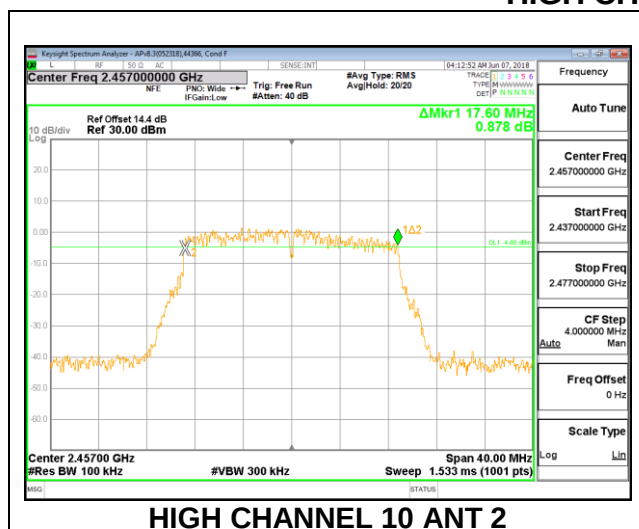


HIGH CHANNEL 9 ANT 2

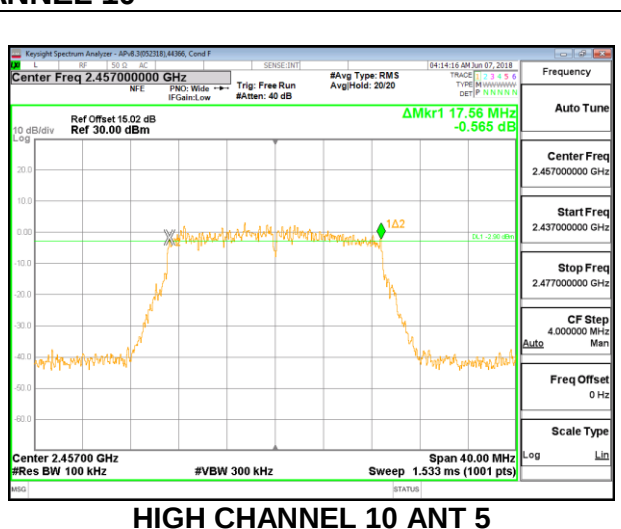


HIGH CHANNEL 9 ANT 5

HIGH CHANNEL 10

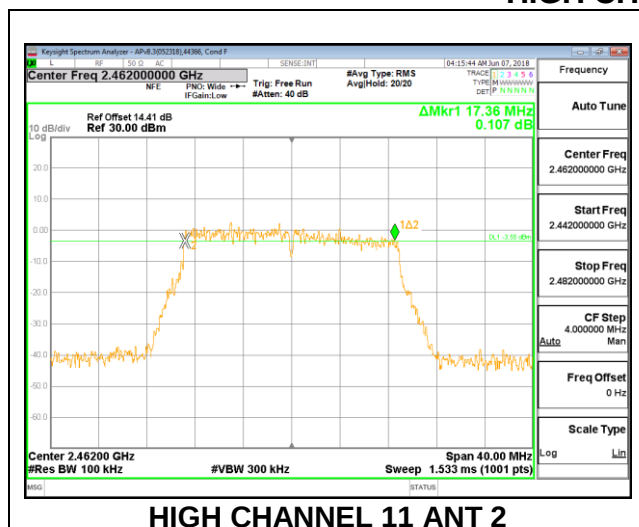


HIGH CHANNEL 10 ANT 2

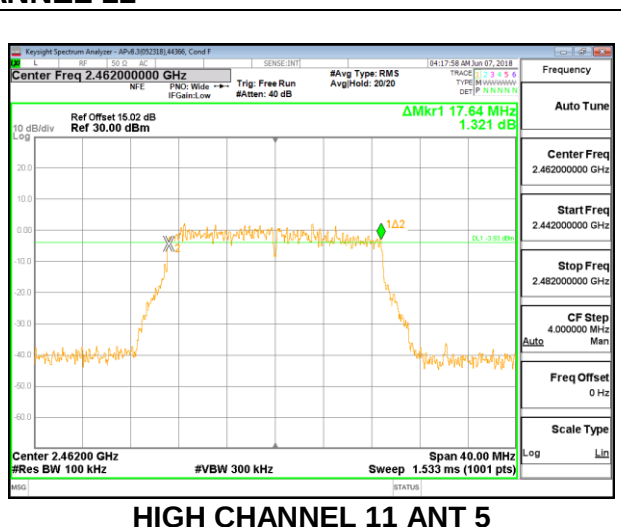


HIGH CHANNEL 10 ANT 5

HIGH CHANNEL 11

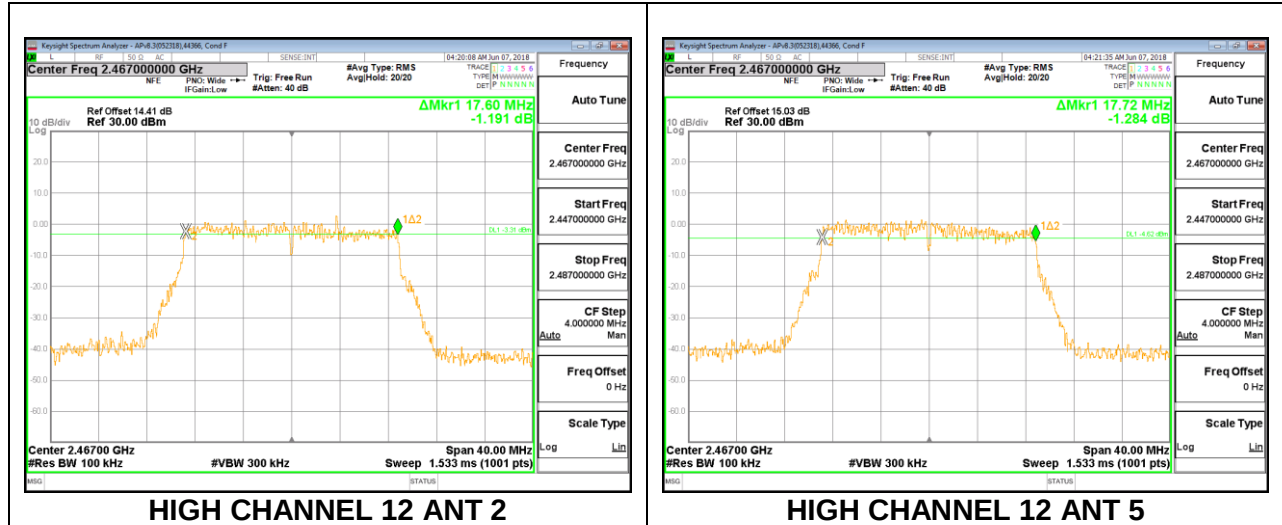


HIGH CHANNEL 11 ANT 2

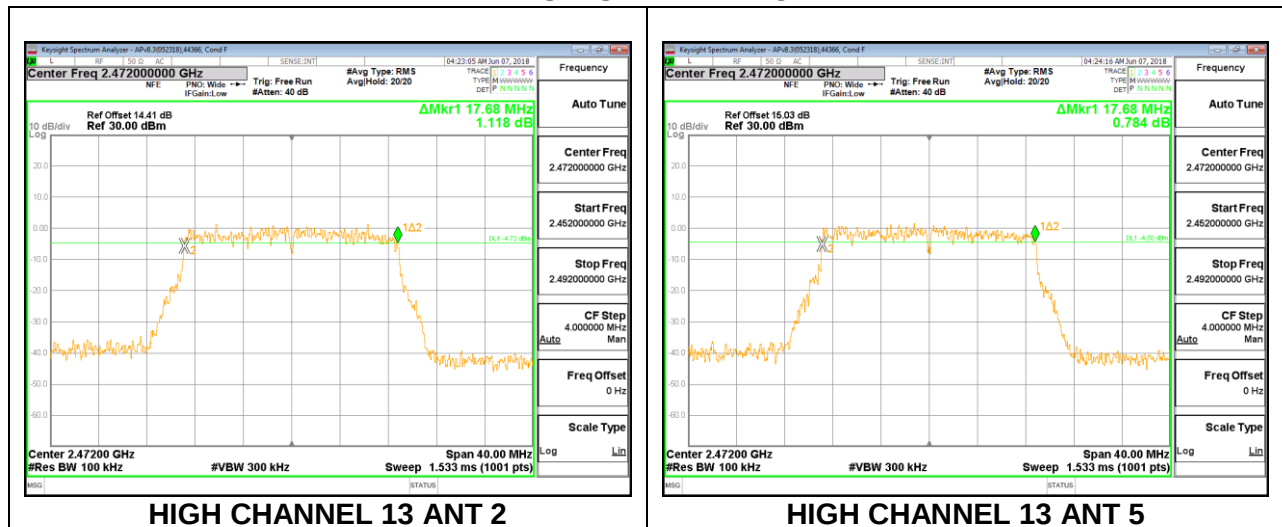


HIGH CHANNEL 11 ANT 5

HIGH CHANNEL 12



HIGH CHANNEL 13



8.4. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)

RSS-247 5.4 (d)

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was entered as an offset in the power meter to allow for a gated average reading of power.

DIRECTIONAL ANTENNA GAIN

For 1 TX:

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

For 2 TX:

Tx chains are uncorrelated for power and correlated for PSD due to the device supporting CDD in all MIMO modes. The directional gains are as follows:

Band (GHz)	Antenna 2 Gain (dBi)	Antenna 5 Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)	Correlated Chains Directional Gain (dBi)
2.4	-2.80	-4.90	-3.72	-0.78

RESULTS

ID:	30554	Date:	7/27/2018
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8.4.1. 802.11b MODE

1TX Antenna 2 MODE

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-2.80	30.00	30	36	30.00
Low 2	2417	-2.80	30.00	30	36	30.00
Mid 6	2437	-2.80	30.00	30	36	30.00
High 11	2462	-2.80	30.00	30	36	30.00
High 12	2467	-2.80	30.00	30	36	30.00
High 13	2472	-2.80	30.00	30	36	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power
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Results

Channel	Frequency (MHz)	ANT 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	20.45	20.45	30.00	-9.55
Low 2	2417	21.51	21.51	30.00	-8.49
Mid 6	2437	21.65	21.65	30.00	-8.35
High 11	2462	21.56	21.56	30.00	-8.44
High 12	2467	20.42	20.42	30.00	-9.58
High 13	2472	18.87	18.87	30.00	-11.13

1TX Antenna 5 MODE

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-4.90	30.00	30	36	30.00
Low 2	2417	-4.90	30.00	30	36	30.00
Mid 6	2437	-4.90	30.00	30	36	30.00
High 11	2462	-4.90	30.00	30	36	30.00
High 12	2467	-4.90	30.00	30	36	30.00
High 13	2472	-4.90	30.00	30	36	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power
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Results

Channel	Frequency (MHz)	ANT 5 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	20.45	20.45	30.00	-9.55
Low 2	2417	21.80	21.80	30.00	-8.20
Mid 6	2437	21.85	21.85	30.00	-8.15
High 11	2462	21.76	21.76	30.00	-8.24
High 12	2467	20.40	20.40	30.00	-9.60
High 13	2472	18.94	18.94	30.00	-11.06

8.4.2. 802.11n HT20 MODE

1TX Antenna 2 MODE

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-2.80	30.00	30	36	30.00
Low 2	2417	-2.80	30.00	30	36	30.00
Low 3	2422	-2.80	30.00	30	36	30.00
Mid 6	2437	-2.80	30.00	30	36	30.00
High 9	2452	-2.80	30.00	30	36	30.00
High 10	2457	-2.80	30.00	30	36	30.00
High 11	2462	-2.80	30.00	30	36	30.00
High 12	2467	-2.80	30.00	30	36	30.00
High 13	2472	-2.80	30.00	30	36	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power
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Results

Channel	Frequency (MHz)	ANT 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	17.35	17.35	30.00	-12.65
Low 2	2417	19.32	19.32	30.00	-10.68
Low 3	2422	21.37	21.37	30.00	-8.63
Mid 6	2437	21.38	21.38	30.00	-8.62
High 9	2452	21.31	21.31	30.00	-8.69
High 10	2457	19.32	19.32	30.00	-10.68
High 11	2462	17.45	17.45	30.00	-12.55
High 12	2467	15.34	15.34	30.00	-14.66
High 13	2472	7.87	7.87	30.00	-22.13

1TX Antenna 5 MODE

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-4.90	30.00	30	36	30.00
Low 2	2417	-4.90	30.00	30	36	30.00
Low 3	2422	-4.90	30.00	30	36	30.00
Mid 6	2437	-4.90	30.00	30	36	30.00
High 9	2452	-4.90	30.00	30	36	30.00
High 10	2457	-4.90	30.00	30	36	30.00
High 11	2462	-4.90	30.00	30	36	30.00
High 12	2467	-4.90	30.00	30	36	30.00
High 13	2472	-4.90	30.00	30	36	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power
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Results

Channel	Frequency (MHz)	ANT 5 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	17.37	17.37	30.00	-12.63
Low 2	2417	19.39	19.39	30.00	-10.61
Low 3	2422	21.26	21.26	30.00	-8.74
Mid 6	2437	21.33	21.33	30.00	-8.67
High 9	2452	21.32	21.32	30.00	-8.68
High 10	2457	19.40	19.40	30.00	-10.60
High 11	2462	17.41	17.41	30.00	-12.59
High 12	2467	15.34	15.34	30.00	-14.66
High 13	2472	7.93	7.93	30.00	-22.07

8.4.3. 2TX Antenna 2 + Antenna 5 CDD MODE

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-3.72	30.00	36	30.00
Low 2	2417	-3.72	30.00	36	30.00
Low 3	2422	-3.72	30.00	36	30.00
Low 4	2427	-3.72	30.00	36	30.00
Mid 6	2437	-3.72	30.00	36	30.00
High 8	2447	-3.72	30.00	36	30.00
High 9	2452	-3.72	30.00	36	30.00
High 10	2457	-3.72	30.00	36	30.00
High 11	2462	-3.72	30.00	36	30.00
High 12	2467	-3.72	30.00	36	30.00
High 13	2472	-3.72	30.00	36	30.00

Duty Cycle CF (dB)	Included in Calculations of Corr'd Power
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Results

Channel	Frequency (MHz)	ANT 2 Meas Power (dBm)	ANT 5 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	16.32	16.40	19.37	30.00	-10.63
Low 2	2417	18.43	18.39	21.42	30.00	-8.58
Low 3	2422	19.88	19.91	22.91	30.00	-7.09
Low 4	2427	21.35	21.44	24.41	30.00	-5.59
Mid 6	2437	21.41	21.45	24.44	30.00	-5.56
High 8	2447	21.37	21.30	24.35	30.00	-5.65
High 9	2452	19.85	19.81	22.84	30.00	-7.16
High 10	2457	18.33	18.41	21.38	30.00	-8.62
High 11	2462	16.32	16.45	19.40	30.00	-10.60
High 12	2467	14.30	14.38	17.35	30.00	-12.65
High 13	2472	6.96	6.89	9.94	30.00	-20.06

8.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

RSS-247 (5.2) (b)

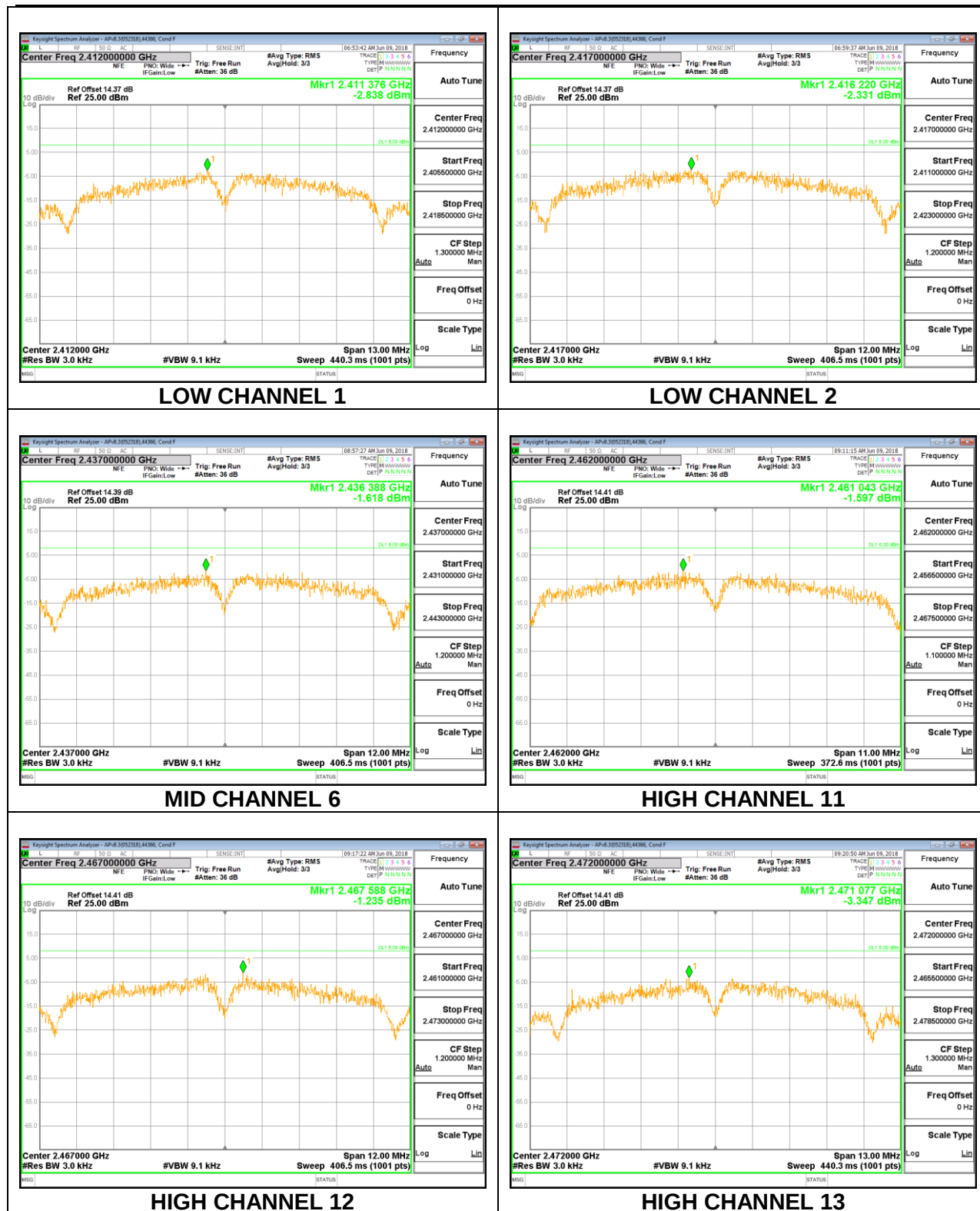
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS

8.5.1. 802.11b MODE

1TX Antenna 2 MODE

Duty Cycle CF (dB)		Included in Calculations of Corr'd PSD			
PSD Results					
Channel	Frequency (MHz)	ANT 2 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-2.84	-2.84	8.0	-10.8
Low 2	2417	-2.33	-2.33	8.0	-10.3
Mid 6	2437	-1.62	-1.62	8.0	-9.6
High 11	2462	-1.60	-1.60	8.0	-9.6
High 12	2467	-1.24	-1.24	8.0	-9.2
High 13	2472	-3.35	-3.35	8.0	-11.4

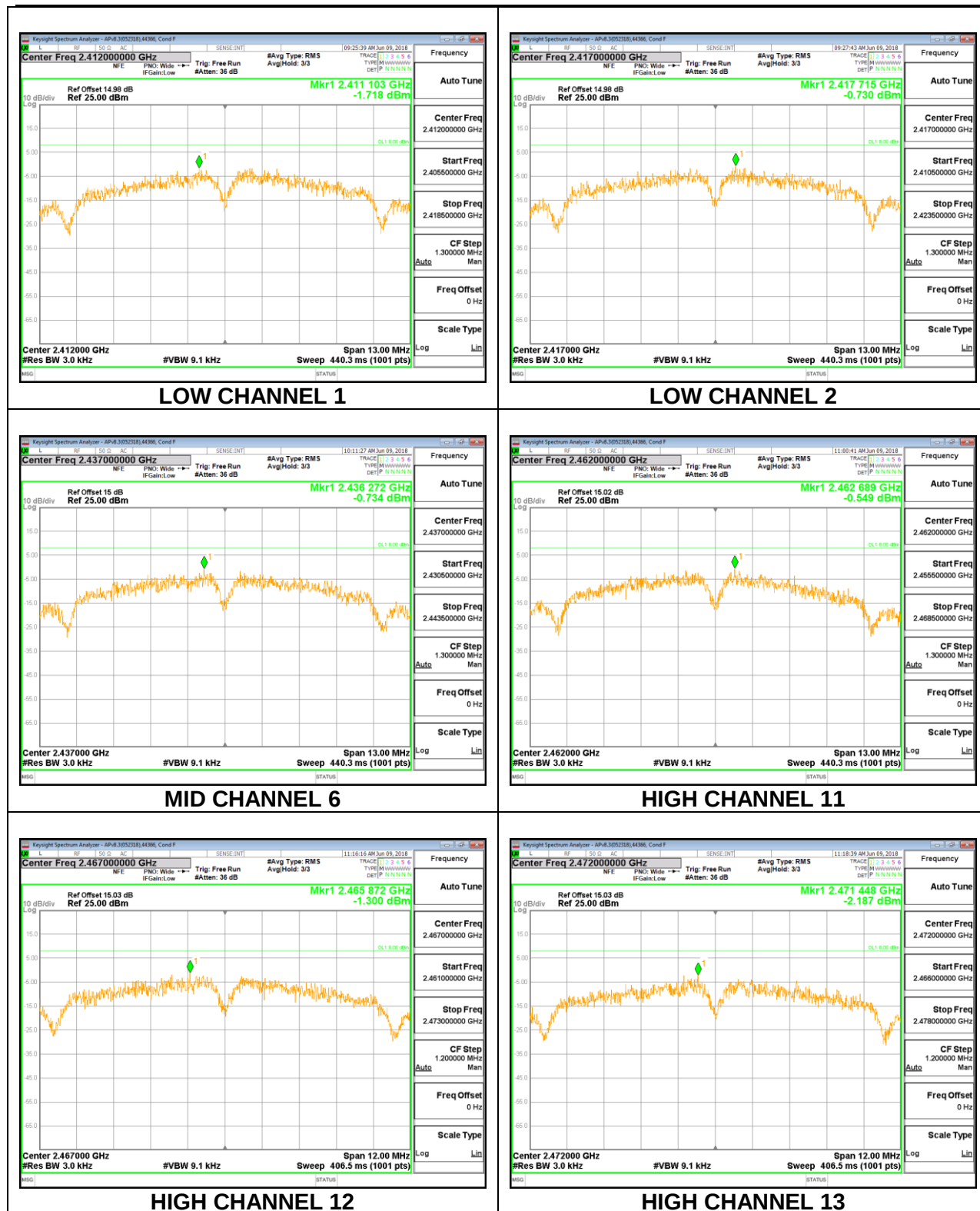


1TX Antenna 5 MODE

Duty Cycle CF (dB)		Included in Calculations of Corr'd PSD
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PSD Results

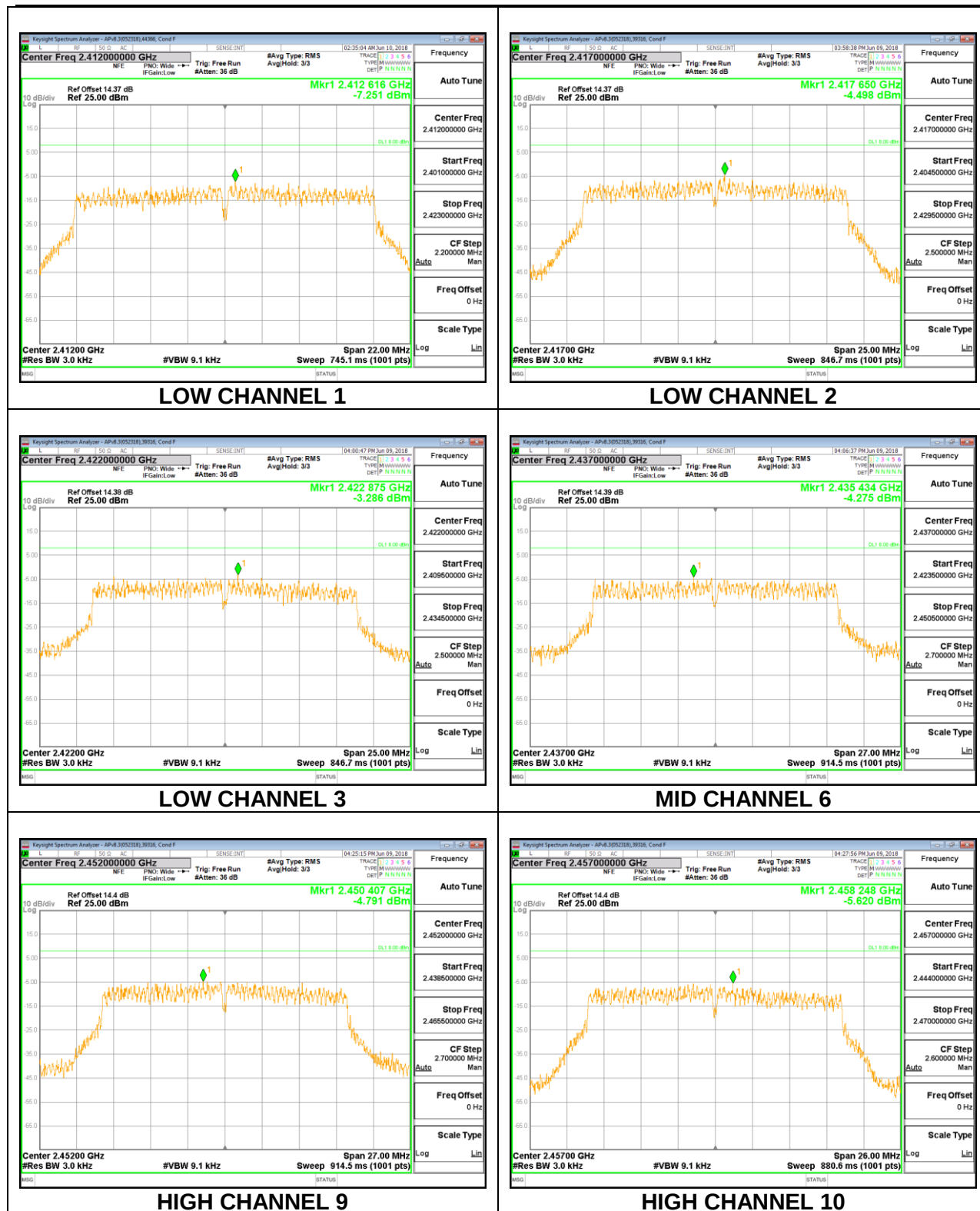
Channel	Frequency (MHz)	ANT 5 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-1.72	-1.72	8.0	-9.7
Low 2	2417	-0.73	-0.73	8.0	-8.7
Mid 6	2437	-0.73	-0.73	8.0	-8.7
High 11	2462	-0.55	-0.55	8.0	-8.6
High 12	2467	-1.30	-1.30	8.0	-9.3
High 13	2472	-2.19	-2.19	8.0	-10.2

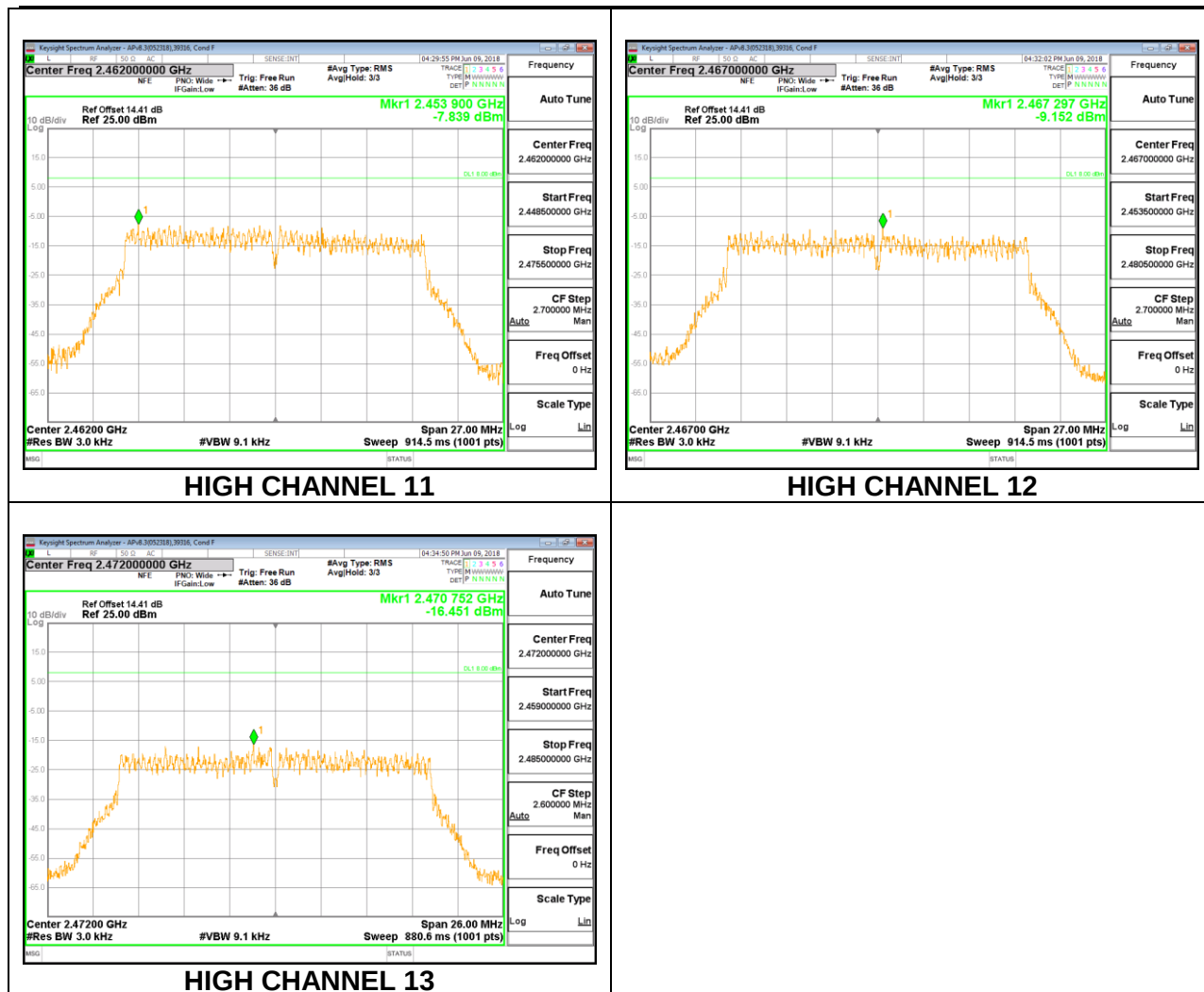


8.5.2. 802.11n HT20 MODE

1TX Antenna 2 MODE

Duty Cycle CF (dB)		Included in Calculations of Corr'd PSD			
PSD Results					
Channel	Frequency (MHz)	ANT 2 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-7.25	-7.25	8.0	-15.3
Low 2	2417	-4.50	-4.50	8.0	-12.5
Low 3	2422	-3.29	-3.29	8.0	-11.3
Mid 6	2437	-4.28	-4.28	8.0	-12.3
High 9	2452	-4.79	-4.79	8.0	-12.8
High 10	2457	-5.62	-5.62	8.0	-13.6
High 11	2462	-7.84	-7.84	8.0	-15.8
High 12	2467	-9.15	-9.15	8.0	-17.2
High 13	2472	-16.45	-16.45	8.0	-24.5



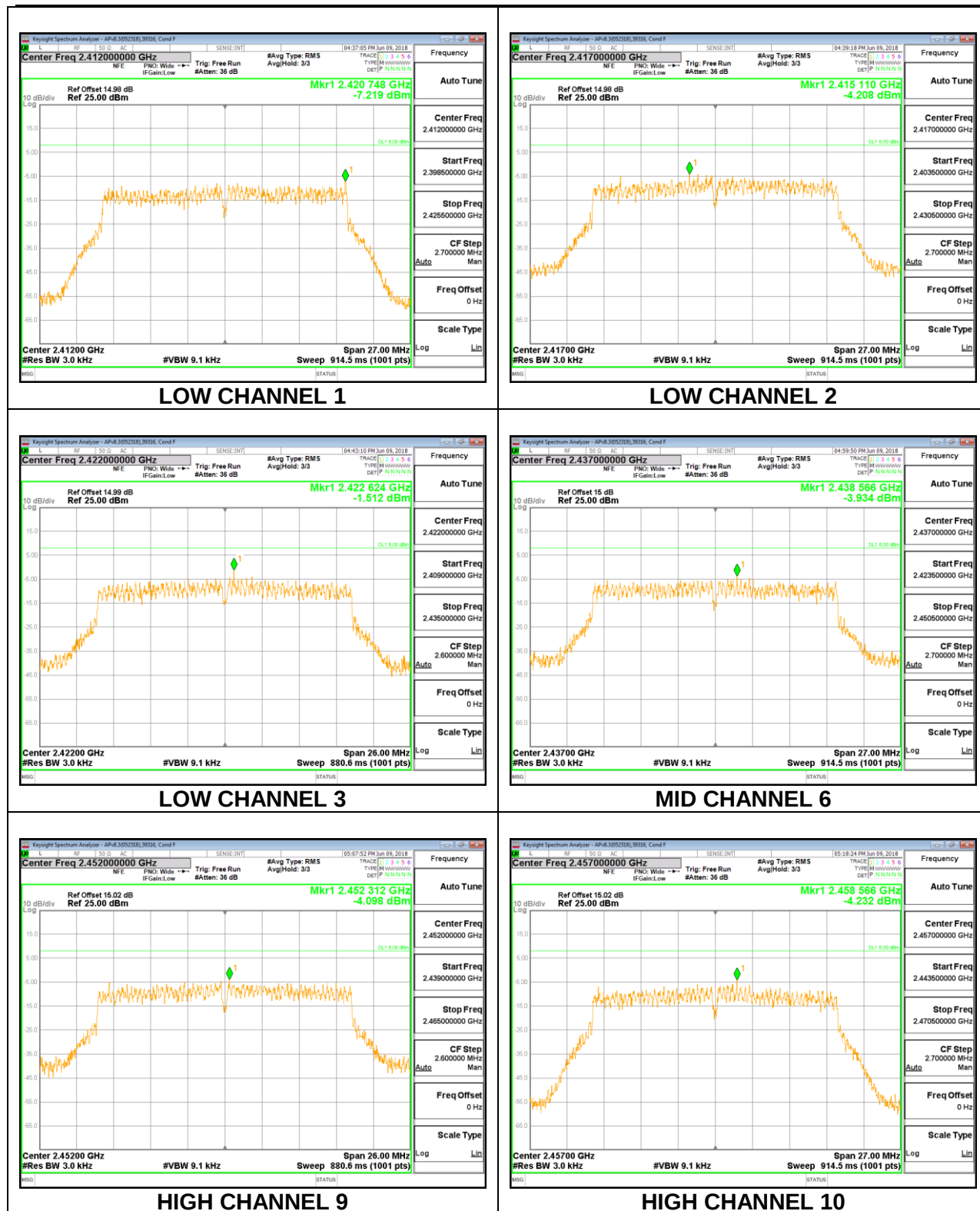


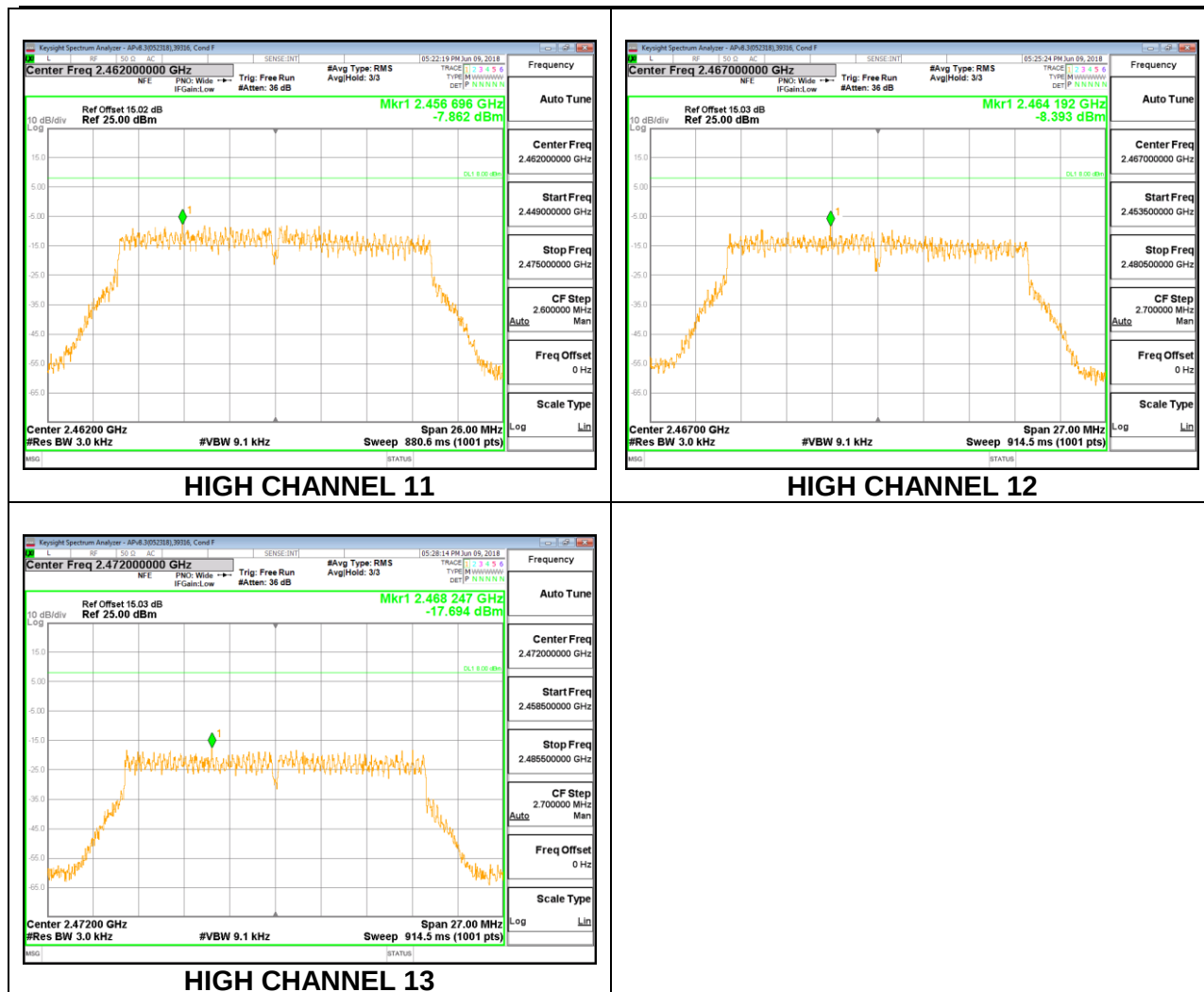
1TX Antenna 5 MODE

Duty Cycle CF (dB)		Included in Calculations of Corr'd PSD
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PSD Results

Channel	Frequency (MHz)	ANT 5 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-7.22	-7.22	8.0	-15.2
Low 2	2417	-4.21	-4.21	8.0	-12.2
Low 3	2422	-1.51	-1.51	8.0	-9.5
Mid 6	2437	-3.93	-3.93	8.0	-11.9
High 9	2452	-4.10	-4.10	8.0	-12.1
High 10	2457	-4.23	-4.23	8.0	-12.2
High 11	2462	-7.86	-7.86	8.0	-15.9
High 12	2467	-8.39	-8.39	8.0	-16.4
High 13	2472	-17.69	-17.69	8.0	-25.7





8.5.3. 2TX Antenna 2 + Antenna 5 CDD MODE

Duty Cycle CF (dB)		Included in Calculations of Corr'd PSD
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PSD Results

Channel	Frequency (MHz)	ANT 2 Meas (dBm/ 3kHz)	ANT 5 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-7.18	-8.34	-4.71	8.0	-12.7
Low 2	2417	-6.50	-5.78	-3.11	8.0	-11.1
Low 3	2422	-5.12	-5.06	-2.08	8.0	-10.1
Low 4	2427	-4.59	-4.26	-1.41	8.0	-9.4
Mid 6	2437	-4.79	-4.13	-1.44	8.0	-9.4
High 8	2447	-4.24	-3.44	-0.81	8.0	-8.8
High 9	2452	-4.45	-5.08	-1.74	8.0	-9.7
High 10	2457	-6.33	-6.25	-3.28	8.0	-11.3
High 11	2462	-8.28	-8.56	-5.41	8.0	-13.4
High 12	2467	-10.33	-9.32	-6.79	8.0	-14.8
High 13	2472	-17.90	-17.19	-14.52	8.0	-22.5